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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/780,986	02/18/2004	Ken Matsumoto	9281-4765	4984

7590 10/25/2006  
Brinks Hofer Gilson & Lione  
P. O. Box 10395  
Chicago, IL 60610

EXAMINER

DHARIA, PRABODH M

ART UNIT	PAPER NUMBER
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2629

DATE MAILED: 10/25/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/780,986	<b>Applicant(s)</b> MATSUMOTO ET AL.	
	<b>Examiner</b> Prabodh M. Dharia	<b>Art Unit</b> 2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 18 February 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-3 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>06-01-06</u> . | 6) <input type="checkbox"/> Other: _____  |

***Priority***

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

***Information Disclosure Statement***

2. The information disclosure statement (IDS) submitted on 06-01-2006 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

***Response to Amendment***

The amendment filed 02-18-2004 does not introduce any new matter into the disclosure. The added material which is supported by the original disclosure. Please all the replies and correspondence should be addressed to examiner's new art unit 2629.

***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-3 are rejected under 35 U.S.C. 102(e) as being anticipated by Numata et al. (6,987,508 B2).

Regarding Claim 1, Numata et al. teaches a force-applying (Col. 18, lines 12-14, Col. 3, Line 3) input device (Col. 6, lines 38-43) comprising: a joystick operation section (Col. 4, Lines 10-14); a position sensor for detecting an operation state of the operation section (Col. 7, Line 45 Item # 7, figure 1); an actuator (Col. 17, Line 44) for applying an external force to the operation section (Col. 17, Line 40 to Col. 18, Line 1); and a control section for controlling drive of the actuator based on a position signal output from the position sensor, the control section computing operation amounts and operation directions of the operation section based on the position signal, and controlling the drive of the actuator (Col. 17, Line 40 to Col. 18, Line 1), wherein, when the operation section is operated in one direction from a start position an external force which increases with an increase in the operation amount is applied in a direction opposite to the operation direction of the operation section until the operation amount of the operation section reaches a predetermined operation amount (Col. 17, Line 40 to Col. 18, Line 10), when the operation amount of the operation section reaches the predetermined operation amount, the external force corresponding to that when the predetermined operation amount is reached is applied in the direction opposite to the operation direction of the operation section (Col. 17, Line 40 to Col. 18, Line 10), when the operation section is stopped, the external force applied to the operation section is reduced with an increase in a returning amount of the operation section from a stopping position of the operation section (Col. 14, Line 47 to Col. 15, Line 24), when the returning amount of the operation section reaches a predetermined returning amount equal to the predetermined operation amount, the application of the external force to the operation section is stopped (Col. 14, Line 47 to Col. 15, Line 18, since external force driving instrument is a stepping motor per position detecting device determining the width of pulse controlling the

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motor running and stopping), and when the operation direction of the operation section is changed during the operation of the operation section, a direction of application of the external force in which a resultant of a first component applied in the direction opposite to the operation direction of the operation section prior to changing the operation direction (Col. 17, Line 40 to Col. 18, Line 10 the actuator signal is determined on the basis of the knob or input device was turned in a direction, in this case knob can be turned in either direction to accurately tuned a radio station ), and a second component applied in a direction opposite to the operation direction of the operation section after changing the operation direction is equal to the external force corresponding to that applied to the operation section when the predetermined operation amount is reached is repeatedly computed in order to apply the external force equal to the resultant in the computed external force application direction (Col. 17, Line 40 to Col. 18, Line 10 the actuator signal is determined on the basis of the knob or input device was turned in a direction, in this case knob can be turned in either direction to accurately tuned a radio station ), the first component being gradually reduced and the second component being gradually increased with an increase in the operation amount of the operation section after changing the operation direction (Col. 5, Lines 44-54, Col. 8, Lines 1-20, Col. 16, Lines 55-67, Col. 14, Line 47 to Col. 15, Line 24, external force actuator would have friction force to deter the effect of the input of force applying input device which is larger as soon as applied input force diminishes or stopped).

Regarding Claim 2, Numata et al. teaches the operation section is operated in one direction from the start position, the increase in the external force until the operation amount of the operation section reaches the predetermined operation amount from the start position and the

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reduction in the external force until the returning amount of the operation section reaches the predetermined returning amount from the stopping position are computed in accordance with linear functions having slopes greater than 0 (see figure 6, Col. 12, Line 62 to Col. 13, Line 13, Col. 5, Lines 44-54, Col. 8, Lines 1-20, Col. 16, Lines 55-67, Col. 14, Line 47 to Col. 15, Line 24, external force actuator would have friction force to deter the effect of the input of force applying input device which is larger as soon as applied input force diminishes or stopped).

Regarding Claim 3, Numata et al. teaches the operation direction of the operation section is changed during the operation of the operation section (Col. 9, Lines 4-62) however, Numata et al. recite or disclose actuator is a motor; force generated by actuator and external force will computed in accordance with an exponential function having an exponent greater than 1, since mass of the rotating circular shaft is an exponential function having an exponent greater than 1; so the force required will have an exponential function having an exponent greater than 1; as  $\text{force} = \text{mass} * \text{acceleration}$ .

### ***Conclusion***

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Schena et al. (6,050,718) Method and apparatus for providing high bandwidth force feedback with improved actuator.

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6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Prabodh M. Dharia whose telephone number is 571-272-7668.

The examiner can normally be reached on M-F 8AM to 5PM.

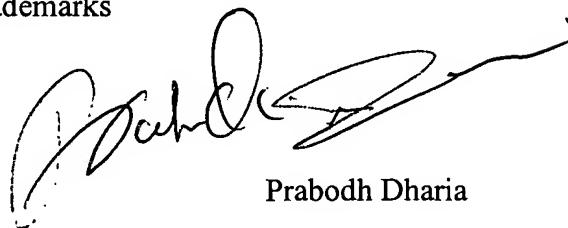
7. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

8. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

A handwritten signature in black ink, appearing to read 'Prabodh Dharia', is written over a horizontal line.

Prabodh Dharia

Partial Program Signatory Authority

AU 2629

October 19, 2006